

Ka-Band Earth Station – Middletown, VA

Frequency Coordination Report

28 GHz



Prepared on Behalf of
Telesat Canada

September 21, 2015



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1. Summary of Results

On behalf of Telesat Canada, Comsearch performed a coordination notice for all existing and proposed terrestrial licenses within the coordination contours of their proposed Ka-Band earth station in Middletown, Virginia, which will transmit at 28 GHz¹. Prior-notification letters were sent to the licensees and a copy of the notification data is provided in section four of this report. The earth station coordination was finalized on September 18, 2015.

No objections were received from any of the incumbent 28 GHz licensees.

2. 28 GHz Common Carrier and LTTS Coordination

In accordance with FCC Rules and Regulations, the Ka-Band earth station in Middletown, Virginia was prior-coordinated by Comsearch. A notification letter and datasheet for this earth station were sent to the following 28 GHz common carrier fixed microwave licensee on September 3, 2015. This licensee is authorized to operate temporary fixed operations from 27.5 to 29.5 GHz on a nationwide basis.

Licensee	Authorized Geographic Area
Verizon	Continental US

A notification letter and datasheets for the Ka-Band earth station in Middletown, Virginia were also sent to the following 28 GHz local television transmission licensee on September 3, 2015. This licensee is authorized to operate temporary fixed operations from 27.5 to 29.5 GHz on a nationwide basis.

Licensee	Authorized Geographic Area
Information Super Station, LLC	Continental US

No objections were received from the common carrier or local television transmission service incumbents.

¹ The proposed earth station will operate in the 28.36 – 29.87 GHz portion of the Ka-Band.

3. 28 GHz LMDS Coordination

The proposed earth station will not operate on frequencies that overlap Block A of the LMDS service. Therefore, no LMDS coordination was necessary.

The total frequency allocation for Block A of the LMDS spectrum appears below.

Block A: 27.500-28.350 GHz
 29.100-29.250 GHz
 31.075-31.225 GHz

4. Earth Station Coordination Data

This section presents the data pertinent to the proposed Ka-Band earth station in Middletown, Virginia. This data was circulated to all incumbent licensees in the shared 28 GHz frequency ranges.

Date: 07/02/2015
 Job Number: <PCNJobCode>

Administrative Information

Status ENGINEER PROPOSAL
 Call Sign <PCNCallSign>
 Licensee Code TELSAT
 Licensee Name Telesat Canada

Site Information

MIDDLETOWN, VA

Venue Name
 Latitude (NAD 83) 39° 1' 0.8" N
 Longitude (NAD 83) 78° 17' 29.0" W
 Climate Zone A
 Rain Zone 2
 Ground Elevation (AMSL) 217.82 m / 714.6 ft

Link Information

Satellite Type Geostationary
 Mode TR - Transmit-Receive
 Modulation Digital
 Satellite Arc 15° W to 15° West Longitude
 Azimuth Range 107.6° to 107.6°
 Corresponding Elevation Angles 11.9° / 11.9°
 Antenna Centerline (AGL) 5.49 m / 18.0 ft

Antenna Information

Receive - FCC32

Transmit - FCC32

Manufacturer		ASC Signal		ASC Signal
Model		9.4 Meter		9.4 Meter
Gain / Diameter		63.0 dBi / 9.4 m		66.5 dBi / 9.4 m
3-dB / 15-dB Beamwidth		0.10° / 0.20°		0.07° / 0.14°
Max Available RF Power	(dBW/4 kHz) (dBW/MHz)			-30.0 -6.0
Maximum EIRP	(dBW/4 kHz) (dBW/MHz)			36.5 60.5
Interference Objectives:	Long Term	-156.0 dBW/MHz	20%	-151.0 dBW/4 kHz 20%
	Short Term	-146.0 dBW/MHz	0.01%	-128.0 dBW/4 kHz 0.0025%

Frequency Information

Receive 18.0 GHz

Transmit 28.0 GHz

Emission / Frequency Range (MHz)	500KG7D - 112MG7D / 18306.0 - 19103.0	500KG7D - 112MG7D / 28361.0 - 28872.0
	500KG7D - 112MG7D / 19700.0 - 20070.0	500KG7D - 112MG7D / 29256.0 - 29868.0

Max Great Circle Coordination Distance	185.9 km / 115.5 mi	100.2 km / 62.2 mi
Precipitation Scatter Contour Radius	100.0 km / 62.1 mi	100.0 km / 62.1 mi

Coordination Values		MIDDLETOWN, VA			
Licensee Name		Telesat Canada			
Latitude (NAD 83)		39° 1' 0.8" N			
Longitude (NAD 83)		78° 17' 29.0" W			
Ground Elevation (AMSL)		217.82 m / 714.6 ft			
Antenna Centerline (AGL)		5.49 m / 18.0 ft			
Antenna Model		ASC Signal 9.4 meter			
Antenna Mode		Receive 18.0 GHz		Transmit 28.0 GHz	
Interference Objectives: Long Term		-156.0 dBW/MHz	20%	-151.0 dBW/4 kHz	20%
Short Term		-146.0 dBW/MHz	0.01%	-128.0 dBW/4 kHz	0.0025%
Max Available RF Power		-30.0 (dBW/4 kHz)			

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 18.0 GHz		Transmit 29.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.29	107.20	-10.00	129.32	-10.00	100.00
5	0.00	102.30	-10.00	136.18	-10.00	100.00
10	0.33	97.42	-10.00	126.92	-10.00	100.00
15	0.29	92.52	-10.00	128.72	-10.00	100.00
20	0.28	87.63	-10.00	129.55	-10.00	100.00
25	0.00	82.74	-10.00	136.18	-10.00	100.00
30	0.00	77.85	-10.00	136.18	-10.00	100.00
35	0.00	72.97	-10.00	136.18	-10.00	100.00
40	0.00	68.09	-10.00	136.18	-10.00	100.00
45	0.00	63.22	-10.00	136.18	-10.00	100.00
50	0.00	58.36	-10.00	136.18	-10.00	100.00
55	0.00	53.52	-10.00	136.18	-10.00	100.00
60	0.00	48.70	-10.00	136.18	-10.00	100.00
65	0.00	43.91	-9.06	138.78	-9.06	100.00
70	0.00	39.16	-7.82	142.33	-7.82	100.00
75	0.00	34.47	-6.43	146.44	-6.43	100.00
80	0.00	29.86	-4.88	151.24	-4.88	100.00
85	0.00	25.39	-3.12	156.91	-3.12	100.00
90	0.00	21.14	-1.13	164.04	-1.13	100.00
95	0.00	17.27	1.07	171.53	1.07	100.00
100	0.00	14.10	3.27	179.24	3.27	100.00
105	0.00	12.20	4.84	184.87	4.84	100.00
110	0.00	12.17	4.87	185.93	4.87	100.19
115	0.00	14.02	3.33	179.46	3.33	100.00
120	0.00	17.16	1.14	171.78	1.14	100.00
125	0.00	21.01	-1.06	164.26	-1.06	100.00
130	0.00	25.25	-3.06	157.10	-3.06	100.00
135	0.00	29.72	-4.83	151.41	-4.83	100.00
140	0.00	34.32	-6.39	146.58	-6.39	100.00
145	0.00	39.01	-7.78	142.45	-7.78	100.00
150	0.00	43.76	-9.03	138.88	-9.03	100.00
155	0.00	48.55	-10.00	136.18	-10.00	100.00
160	0.00	53.37	-10.00	136.18	-10.00	100.00
165	0.00	58.21	-10.00	136.18	-10.00	100.00
170	0.00	63.07	-10.00	136.18	-10.00	100.00
175	0.00	67.94	-10.00	136.18	-10.00	100.00
180	0.00	72.81	-10.00	136.18	-10.00	100.00
185	0.34	77.68	-10.00	126.26	-10.00	100.00

Coordination Values		MIDDLETOWN, VA			
Licensee Name		Telesat Canada			
Latitude (NAD 83)		39° 1' 0.8" N			
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Ground Elevation (AMSL)		217.82 m / 714.6 ft			
Antenna Centerline (AGL)		5.49 m / 18.0 ft			
Antenna Model		ASC Signal 9.4 meter			
Antenna Mode		Receive 18.0 GHz		Transmit 28.0 GHz	
Interference Objectives: Long Term		-156.0 dBW/MHz	20%	-151.0 dBW/4 kHz	20%
Short Term		-146.0 dBW/MHz	0.01%	-128.0 dBW/4 kHz	0.0025%
Max Available RF Power			-30.0 (dBW/4 kHz)		

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 18.0 GHz		Transmit 29.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	1.60	82.55	-10.00	100.00	-10.00	100.00
195	1.69	87.46	-10.00	100.00	-10.00	100.00
200	3.01	92.39	-10.00	100.00	-10.00	100.00
205	3.07	97.33	-10.00	100.00	-10.00	100.00
210	3.07	102.27	-10.00	100.00	-10.00	100.00
215	2.10	107.16	-10.00	100.00	-10.00	100.00
220	0.66	111.97	-10.00	107.23	-10.00	100.00
225	0.00	116.78	-10.00	136.18	-10.00	100.00
230	0.00	121.64	-10.00	136.18	-10.00	100.00
235	0.00	126.48	-10.00	136.18	-10.00	100.00
240	0.00	131.30	-10.00	136.18	-10.00	100.00
245	0.00	136.09	-10.00	136.18	-10.00	100.00
250	0.00	140.84	-10.00	136.18	-10.00	100.00
255	0.00	145.53	-10.00	136.18	-10.00	100.00
260	0.00	150.14	-10.00	136.18	-10.00	100.00
265	0.00	154.61	-10.00	136.18	-10.00	100.00
270	0.00	158.86	-10.00	136.18	-10.00	100.00
275	0.00	162.73	-10.00	136.18	-10.00	100.00
280	0.23	166.09	-10.00	133.80	-10.00	100.00
285	0.23	168.03	-10.00	133.36	-10.00	100.00
290	0.22	168.04	-10.00	134.80	-10.00	100.00
295	0.24	166.18	-10.00	133.03	-10.00	100.00
300	0.23	163.00	-10.00	134.02	-10.00	100.00
305	0.20	159.10	-10.00	136.13	-10.00	100.00
310	0.22	154.84	-10.00	134.88	-10.00	100.00
315	0.00	150.28	-10.00	136.18	-10.00	100.00
320	0.00	145.68	-10.00	136.18	-10.00	100.00
325	0.00	140.99	-10.00	136.18	-10.00	100.00
330	0.22	136.29	-10.00	134.18	-10.00	100.00
335	0.22	131.49	-10.00	134.36	-10.00	100.00
340	0.26	126.67	-10.00	131.46	-10.00	100.00
345	0.37	121.84	-10.00	123.66	-10.00	100.00
350	0.43	116.98	-10.00	119.11	-10.00	100.00
355	0.35	112.09	-10.00	125.27	-10.00	100.00



5. Contact Information

For questions or information regarding the 28 GHz Frequency Coordination Report, please contact:

Contact person: Joanna Lynch
Title: Manager, Spectrum & Data Solutions
Company: Comsearch
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